From the Department Chair

Dear Alumni and Friends,

Welcome to the department newsletter for 2007. As I write this in February, we are experiencing the coldest weather of the winter. But on the top of South Mountain, the sun is bright and we can glimpse spring on the horizon. So it's time for our annual newsletter, looking back at events in the department and among our alumni during the past year.

Here in the department, 2006 was a year that included major new grants and gifts, accomplishments and awards, exciting research in neuroscience and molecular cell biology, record high enrollments and nearly 100 degrees awarded, new faculty and staff arrivals, and a retirement.

In May 2006, Lynne Cassimeris and Colin Saldanha won the University's top two awards for, respectively, outstanding research and excellence in teaching. In June, Lehigh was awarded our fourth four-year grant from the Howard Hughes Medical Institute. All of you who are alumni since 1988 have benefitted from these awards, either by the direct support of your undergraduate research or the numerous infrastructural improvements in the department over the years. In November, we received a major gift from the global medical technology company, BD (Becton, Dickinson & Co.). Read all about the new BD FACSCanto II flow cytometer. Michael Burger, who studies signal integration and sensory networks, joined the department as our newest faculty member, and Meg Kenna and Jennifer McClintock became the core of our superb technical staff. During the summer, we had a party to celebrate the career of Margaret Krawiec, who retired as manager of the instructional labs in Williams Hall. Every "bio" alum since 1972 benefited from Margaret's dedicated and superb service to Lehigh and her department.

Best wishes for 2007 to all alumni and friends of the Lehigh Biological Sciences community.

Jeffrey A. Sands, Ph.D.
Professor and Chair

Jeff Sands
Chairperson

Caitlin Oksienik, Kristen Cornell and Associate Chairperson Linda Lowe-Krentz at the annual Undergraduate Research Symposium in April, 2006

In this issue ...

Department of
Biological Sciences
111 Research Dr.
Bethlehem, PA 18015
Tel: 610.758.3680
Fax: 610.758.4004
www.lehigh.edu/~inbios

Howard Hughes Medical Institute grant to fund bioscience education

In June 2006, Lehigh University was awarded a four-year, $1.8 million grant from the Howard Hughes Medical Institute to fund undergraduate bioscience educational opportunities around the theme of Biosystems Dynamics. The university was selected from a potential field of 160 institutions across the country, and joins a list of recipients that includes the most distinguished research institutions. The award brings the total Lehigh has received from this highly competitive HHMI program since 1989 to $5.5 million, according to Jeff Sands, chair of the department of biological sciences, who served as program director for the previous grants.

Professor Neal Simon serves as the HHMI program director and Professor Vassie Ware serves as the program co-director. Both Simon and Ware have headed components of previous HHMI awards to Lehigh.

"This grant," says Simon, "recognizes Lehigh's commitment to innovation and national leadership in undergraduate biological sciences education. It's another piece in a nearly 20-year history of recognition by the most prestigious educational foundations of Lehigh's ability to prepare students in biological sciences and related fields to address the increasingly complex questions facing contemporary biology and medicine."

The latest HHMI award will further strengthen and support the university's long-standing commitment to excellence in bioscience education, says Sands, who notes that grant reviewers specifically pointed to the focus on research-intensive experiences for students in a biosystems dynamics team setting as a particular strength of the proposal.

From 1989 through 2002, Lehigh's undergraduate biological sciences and science outreach programs flourished as a direct result of three HHMI grants. The first, in 1989, allowed the university to inaugurate the Biological Sciences Honors Program. Subsequent grants in 1994 and 1998 provided for the development of two major infrastructure investments: the Hughes Undergraduate Biology Center, which offers specialized research support modules for undergraduates; and the Science Outreach Center, which provides a central location for developing, testing and organizing equipment and materials for presentations and programs for pre-college students.

The new HHMI grant will allow the university to broaden its approach to education in the biological sciences, Simon says. A new introductory survey course that includes community access will utilize a theme-based, systems orientation to promote bioscience literacy. The overall theme of Biosystems Dynamics will include advanced courses that stress an integrative systems approach to issues in life science, including a Computational Biology Lab for modeling physiological processes.

The university will continue to develop its expertise and capabilities in bioimaging through equipment acquisitions and a remote connection to the Center for Comparative NeuroImaging at the University of Massachusetts Medical School, which will allow fMRI studies to be run from Lehigh facilities. Lastly, a distinguished visiting scholars component will bring leading scientists in systems biology to campus.

Anne Meltzer, the Herbert J. and Ann L. Siegel Dean of the College of Arts and Sciences, notes that the HHMI grant presents "a wonderful opportunity to enhance Lehigh's commitment to undergraduate research.

"The strength of this project," she says, "is its focus on multidisciplinary perspectives and teamwork, reaching out to students from computer science, mathematics, physics, chemistry, and engineering, in addition to biological sciences and involving them in life science research."

The Hughes program has had a broad impact on science education at Lehigh by making research experiences and project-based learning routinely available as part of the curriculum. In addition, HHMI support has allowed Lehigh's pre-college science outreach program to expand dramatically over the past decade and a half.

A nonprofit medical research organization, the Howard Hughes Medical Institute was established in 1953 by the aviator-industrialist. The Institute, headquartered in Chevy Chase, Md., is one of the largest philanthropies in the world.

HHMI grounds its research programs on the conviction that scientists of exceptional talent and imagination will make fundamental contributions of lasting scientific value and benefit to mankind when given the resources, time, and freedom to pursue challenging questions. The Institute prizes intellectual daring and seeks to preserve the autonomy of its scientists as they pursue their research.

Do you remember?

Professors in the Biology Department (circa 1952)

(l to r) William Jollie, Francis Trembley, Hope Ritter, Basil Parker, Bradford Owen, Stanley Thomas

Many thanks to John Leith for sharing this photgraph with us!

Lehigh University Receives BD Flow Cytometer

Courtesy and © Becton, Dickinson and Company

left to right: Vincent Forlenza ('75) (BD); Associate Professor Robert Skibbens; College of Arts & Sciences Dean, Anne Meltzer; Gene Vivino ('80) (BD); Assistant Professor Stefan Maas; Department Chair, Jeff Sands; Professor Neal Simon; Assistant Professor Matthias Falk

Lehigh University received a significant enhancement to its research infrastructure this November with a gift of a new state-of-the-art flow cytometer from BD, a leading global medical technology company. Flow cytometry in the research setting has applications for immune function, vaccine research, infectious disease, and oncology, and the donation of this new system puts Lehigh at the forefront in cell analysis capabilities.

"The technologically advanced *BD FACSCanto II* flow cytometry system provides accelerated flow rates that will greatly increase the efficiency of data acquisition for faculty and students," said Neal Simon, professor in the Department of Biology at Lehigh, who worked with BD to help secure the equipment. "As a two-laser instrument, the *BD FACSCanto II* will enable simultaneous analyses of numerous cell surface and cell cycle markers."

The acquisition of the new flow cytometer will enable faculty members in Biological Sciences and other departments at Lehigh to assess defects in cell cycle progression—a hallmark of cancer research. The equipment will also enhance other studies at Lehigh, such as the analysis of cell surface receptors as they relate to human reproduction/infertility and cell-to-cell signaling.

Keeping pace with technology to provide researchers with access to complex, state-of-the art research equipment and scientific instrumentation is essential for every college and university. Lehigh University strives to create for its researchers an environment that stimulates exposure to new ideas, research methods, and technological advances, which translate into the publication of vital research findings.

"The *BD FACSCanto II* system will allow Lehigh to incorporate novel methods in optics, cell imaging, and detection into our instructional curriculum in biology, bioengineering, and applied life science," said Robert Skibbens, associate professor of biology, who also worked on the BD/Lehigh team. "Routine access to advanced flow cytometry will strengthen Lehigh's research capabilities and competitiveness for funding from the National Institutes of Health and the National Science Foundation."

The research-intensive Department of Biological Sciences at Lehigh is comprised of 22 faculty members trained in top-tiered research institutions across the U.S. To enhance its capabilities, Lehigh continuously invests in advanced instrumentation. Other recent acquisitions also support advanced genomics and imaging. In April 2006, Lehigh hosted a symposium on Industry-University Partnerships in Bioscience and Biotechnology, with a focus on innovations in licensing, strategies, practices, and structures that optimize the commercial potential of the university as a collaborator with the private sector.

A job well done!

Margaret Krawiec retires after 34 years of service.

After having touched the educational lives of thousands of Lehigh students, the department bid farewell and goodluck to a colleague and friend, Margaret Krawiec, who retired from service to Lehigh on June 30, 2006. Margaret began her duties in 1972 as a half-time lab technician in the Biology Department. By the end of the 1970s, Margaret played a crucial part in carrying out the undergraduate teaching mission for all biology students. Her role became even more important in 1991 when the department office and faculty offices completed their move to the Mountaintop Campus and the basic biology undergraduate lab courses continued to function efficiently in Williams Hall.

Margaret was honored at a retirement celebration held on June 22, 2006. During this gathering Jeff Sands, Chairperson of the Department of Biological Sciences, shared the following statement with Margaret and those in attendance:

"We have been participants in major changes in Biology at Lehigh over the past one-third century, and in a very real sense we are all co-authors in the "writing" of this evolving saga. As you move up to emeritus status in the department, we congratulate you on a career very well accomplished, a major part of a life being very well lived. On a personal level, I am honored to have had you as a long-time colleague and to consider you as a friend."

Well done, Margaret Krawiec. Well done!

Falk shares microscopy expertise in Japan

by Kurt Pfitzer, University Relations

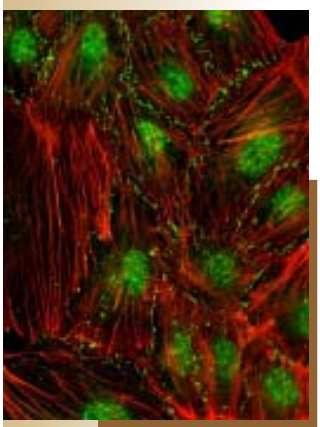
In September, Assistant Professor Matthias Falk traveled with David Williams, then Vice-Provost for Research, and Masashi Watanabe, senior research scientist in the Center for Advanced Materials and Nanotechnology, to Sapporo, Japan to the 16th International Microscopy Congress (IMC). The quadrennial conference is considered the world's most important microscopy conference. Lehigh's materials science and engineering faculty are regularly invited to the IMC conference. The Sapporo meeting was the first IMC congress that a biological sciences professor also attended.

Falk gave an invited talk titled "Gap Junction Biosynthesis and Degradation Studied in Living Cells." Gap junctions are a type of cell-to-cell junction through which cells communicate with each other.

Falk is a leader in the use of fluorescence light microscopy and derivatives of proteins to study gap junction biosynthesis and function in living cells. He is particularly interested in the physiological and pathological conditions that can sever the junctions and cause cells to migrate or proliferate in an uncontrolled manner.

The results of Falk's research into gap junctions will be published in an upcoming issue of *Molecular Biology of the Cell*, the official journal of the American Society for Cell Biology, a prestigious, peer-reviewed international publication.

While at the IMC conference in Japan, Falk, Watanabe and Williams met with Japan's Emperor Akihito and Empress Michiko. The three researchers also attended a one-hour concert by the Sapporo Symphony Orchestra, which was conducted by Takaseki Ken. Williams said the attendance by the Emperor and Empress, along with the orchestra concert, "demonstrate the deep appreciation for microscopy in Japan and underscore the importance of microscopy for modern science."



Primary porcine Pulmonary Artery Endothelial Cells (PAECs) stained for the gap junction protein Cx43 (Alexa488, green) and actin filaments (Rh-phalloidin, red). Cell nuclei (green ovals) are visible as well. *S. Baker. Falk Lab*

(l to r) Masashi Watanabe, David Williams, and Matthias Falk in Japan

Iovine mentors high school student in research

Asst. Professor M. Kathryn Iovine, Ph.D. and Freedom High School student, Isha Jain

It happened over a year ago. It happened because of a simple, multi-recipient e-mail.

Dear Colleague,

My daughter has an interest in genetics and would like to do some research. Can we come and meet with you? ...

Assistant Professor Kathy Iovine was one of the recipients of this seemingly simple request. But any professor will tell you that this is not as easy as it sounds. Working with young, non-college students takes a lot of time and energy. But something told Dr. Iovine that this was different.

Thus, an incredible educational relationship began between a university professor and a young high school student.

Isha Himani Jain was only 14 years old when her father, Professor Himanshu Jain (Materials Sciences and Engineering), e-mailed some of the professors in the Department of Biological Sciences to try to find someone who would work with Isha.

Oh, how far they have come. For over a year Ms. Jain and Dr. Iovine have been doing research together. Isha's journey began in Dr. Iovine's lab learning about how organs and limbs grow to their proper size with respect to the overall size of the individual. Her research culminated in the presentation entitled, "Cell Proliferation is Episodic and Pulsatile During Growth of Zebrafish," and won first place in zoology at the State/National competition of the Intel Science and Engineering Fair, which was held at the Delaware Valley Expo Center. Isha was one of two finalists from her grade to go on to the international competition, which was held in May, 2006 in Indianapolis, where she was in the running for over a million dollars in scholarships.

Isha was one of over 1,400 students from 40 different countries exhibiting their projects. We are proud to report that Isha was awarded some prizes. They included: Endocrine Society (Honorable Mention), Intel Corporation (4th place, Zoology; $500 award), U.S. Air Force (2nd place, Zoology; $1,500 award), Cook Company ($2,000 award and a $5,000 summer internship opportunity).

Besides her passion for research, Isha's "spare" time is filled with playing soccer and studying classical/modern Indian dancing. At Freedom High School, Isha is a member of the student council, the debate team, ski club, the Superintendent's Student Advisory Committee, and the American Regional Math League.

What's in Isha's future? She will continue her high school studies at Freedom High School in Bethlehem, where she is in her junior year. She and Dr. Iovine are continuing their research which will follow cell proliferation in *long fin* and *short fin* mutants. "After learning so much about this field from Prof. Iovine and the project, I would like to eventually become a geneticist or a biomathematician."

What does Isha have to say about her accomplishments in research? "Of course, I have to say that a lot of the credit goes to Prof. Iovine – for all the advice, instruction, support and encouragement."

Dr. Iovine's research is supported by the NICHD (R01HD047737) and the NIDCR (K22DE014863).

2006 publications

For a more in-depth listing of publications please visit our website (www.lehigh.edu/~inbios) and explore individual faculty members' information.

Bold = Faculty
Bold + Italics = ***Graduate student***
Underline = Undergraduate

Venditti, J., Donigan, K., **Bean, B.** 2006. Crypticity and Functional Distribution of the Membrane Associated a-L-Fucosidase of Human Sperm. Molecular Reproduction and Development. 2006 November 28 [Epub ahead of print],

Cassimeris, L. 2006. Q and A. Current Biology. volume 16, number 13, pgs R480 - R481.

J. Warren, A. Rutkowski and **L. Cassimeris**. 2006. Infection with Replication-Deficient Adenovirus Induces Changes in the Dynamic Instability of Host Cell Microtubules. Mol. Biol. Cell. 17: 3557 – 3568.

Deufel, A. and **Cundall, D.** 2006. Functional plasticity of the venom delivery system in snakes with a focus on the poststrike prey release behavior. Zool. Anz. 245: 249-267.

Piehl, M., Lehmann, C., ***Gumpert, A.***, Denizot, J.P., Segretain, D., **Falk, M.M.** Internalization of Large Double-Membrane Intercellular Vesicles by a Clathrin-dependent Endocytic Process. Mol Biol Cell. 2006 Nov 15; [Epub ahead of print], in Print Vol. 18, February 2007.

Goldsmith, M.I., **Iovine, M.K.**, O'Reilly-Pol, T., Johnson, S.L. A developmental transition in growth control during zebrafish caudal fin development. Dev. Biol. 296: 450-457.2006.

Santangelo, N. & **Itzkowitz, M.** 2006. How does competition influence mate choice decisions for males and females in the monogamous convict cichlid fish, *Archocentrus nigrofasciatus*. Behaviour. 143: 619-642.

Hamel, M., ***Kanyi, D.A.***, Cipolle, M.D., and **Lowe-Krentz, L.J.** 2006. Active stress kinases in proliferating endothelial cells associated with cytoskeletal structures. Endothelium. 13:157-170. *Cover image, see below.*

Maas, S., Kawahara, Y., Tamburro, K.M., and Nishikura, K. 2006: A-to-I RNA editing and human disease. RNA Biology, 3(1) e1-9.

James, P. J., **Nyby, J. G.**, Saviolakis, G. A. Sexually stimulated testosterone release in male mice (Mus musculus): Roles of genotype and sexual arousal, Hormones and Behavior, 50: 424-431. 3 Sept. 2006.

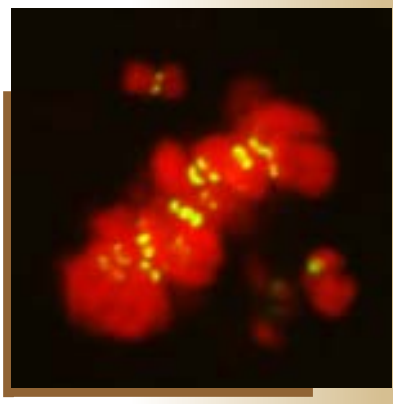
Rohmann KN, Schlinger BA, & **Saldanha, CJ.** (2006). Subcellular compartmentalization of aromatase is sexually dimorphic in the adult zebra finch brain. Journal of Neurobiology. 20;67(1):1-9.

Schneider, J.E., Casper, J.F., Barisich, A., Schoengold, C., Cherry, S., Surico, J., DeBarba, A., Fabris, F. and Rabold, E. Food deprivation and leptin prioritize ingestive and sex behavior without affecting estrous cycles in Syrian hamsters. *Hormones and Behavior*, in press, 2007.

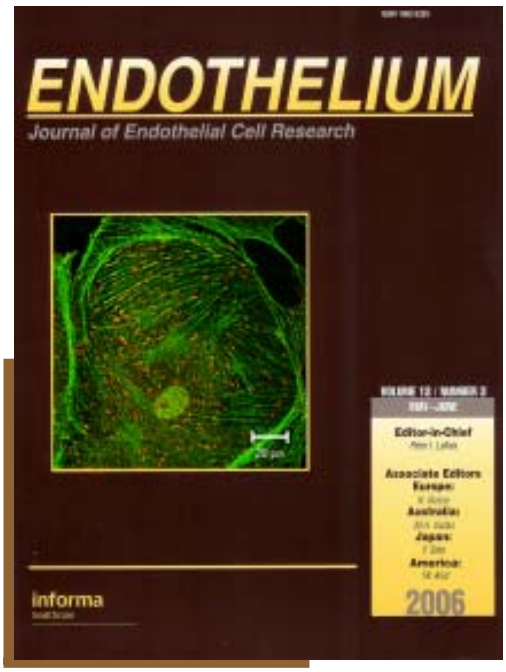
Mo, Q., Lu, S., **Simon, N.G.** (2006) Dehydroepiandrosterone and its metabolites: Differential effects on androgen receptor trafficking and transcriptional activity. J Ster. Biochem. Mol. Biol., 99, 50-58.

Antoniacci, L. & **Skibbens, R. V.**, Sister-Chromatid Telomere Cohesion Is Nonredundant and Resists Both Spindle Forces and Telomere Motility. Current Biology 16, 902–906, May 9, 2006. (feature article)

Wang, J., **Swann, J.M.** The magnocellular medial preoptic nucleus I. Sources of afferent input. Neuroscience. 2006 Sep 1;141(3):1437-56. Epub 2006 Jun 12. PMID: 16766128



Chromosomes in a human cell. Red stain shows DNA, green stain shows the proteins bound to chromosomes which move them during cell division. *L. Cassimeris*



Active stress kinases in wounded and proliferating endothelial cells localize with the actin fibers (Jun N-terminal kinase; green) and focal adhesion sites (p38 MAP kinase; red). *D. Kanyi. Lowe-Krentz Lab*

Biological Sciences

Jeffrey Sands, Ph.D. Chair
Barry Bean, Ph.D.
Michael Behe, Ph.D.
Michael Burger, Ph.D.
Maria Bykhovskaia, Ph.D.
Lynne Cassimeris, Ph.D.
David Cundall, Ph.D.
Matthias Falk, Ph.D.
M. Kathryn Iovine, Ph.D.
Murray Itzkowitz, Ph.D.
Steven Krawiec, Ph.D.
Michael Kuchka, Ph.D.
Linda Lowe-Krentz, Ph.D.
Stefan Maas, Ph.D.
Jutta Marzillier, Ph.D.
John Nyby, Ph.D.
Colin Saldanha, Ph.D.
Jill Schneider, Ph.D.
Neal Simon, Ph.D.
Robert Skibbens, Ph.D.
Jennifer Swann, Ph.D.
Vassie Ware, Ph.D.

Department welcomes new faculty

R. Michael Burger, Ph.D.

Lehigh welcomed its newest faculty member of the Department of Biological Sciences in August. Dr. R. Michael Burger specializes in sensory networks and signal integration. Dr. Burger received his bachelor's degree from Ithaca College and his Ph.D. from the University of Texas at Austin. Burger was then appointed as a postdoctoral fellow at the University of Washington. Prior to his arrival at Lehigh as an assistant professor, Burger was named a Von Humboldt Fellow, a prestigious award which supported a year's study in Germany.

Dr. Burger's research program employs state-of-the-art neuranatomical and electrophysiological methods to analyze signal integration. He has published in a variety of journals, including Trends in Neuroscience, Journal of Neuroscience, and Journal of Comparative Neurology. You can learn more about Dr. Burger's research at http://www.lehigh.edu/~inbios/faculty/burger.htm.

Two faculty members win major awards

Professors Colin Saldanha and Lynne Cassimeris

The following were recipients of the 2006 Faculty Awards presented at the annual faculty dinner on May 1, 2006.

Professor Lynne Cassimeris, was the recipient of the Eleanor and Joseph F. Libsch Research Award, which "recognizes individuals who have conducted outstanding research activities at the Univeristy." Lynne's research in cell biology is funded by the National Institutes of Health.

Assistant Professor Colin Saldanha received the Donald B. and Dorothy L. Stabler Award for Excellence in Teaching, which is presented to a member of the faculty who has demonstrated not only mastery of his or her field and superior ability in communicating it to others, but also an exceptional talent for encouraging students. Colin was nominated for this award by an individual campus student living group (fraternity, sorority, etc.) and chosen from the pool of nominees by the administration.

Graduate student honored

Graduate Student Abigail Pattishall was one of the recipients of the Lehigh University Teaching Assistant Award, which honors excellence demonstrated by graduate student teaching assistants. This award was announced at the annual faculty dinner on May 1, 2006. Pattishall was nominated for this award by members of the Fall 2005 Comparative Vertebrate Anatomy class. Abby spends much of her time out of the classroom conducting research in the lab of Prof. David Cundall

Abigail Pattishall (center) working with undergraduate students (l to r) Laurent Delavaux, Vaishali Patel, Larry Nguyen, and Bhumi Patel.

Student Spotlight

William Coleman
Graduate Student

William Coleman is a fourth year graduate student in the Molecular Biology program in the Department of Biological Sciences. Working in the laboratory of Dr. Maria Bykhovskaia, William's research focuses on how presynaptic proteins modulate the mechanisms that are thought to underlie learning and memory at the cellular level. Specifically, William is interested in how two presynaptic proteins (synapsin II and rab3a) function in the vesicle cycle in the mouse neuromuscular junction. Changes in synaptic transmission can be monitored using electrophysiology, which is the main experimental technique William uses. Classically, synapsin II has been thought to interact with both synaptic vesicles and cytoskeletal filaments to create a reserve of pool vesicles. Rab3a has been thought to aide in vesicle trafficking to the presynaptic membrane. More recent data have suggested that these proteins may also act closer to the actual exocytic event, and that these proteins may interact. William's future work will focus on how synapsin II and rab3a function under various extracellular calcium concentrations, and how these proteins' interaction affects neurotransmitter release and short-term synaptic plasticity. Further understanding of the role of these proteins may provide insight into the molecular mechanisms that underlie learning and memory. Dr. Bykhovskaia's research is funded through a grant from the National Institutes for Health.

Injection of Oregon Green 488 BAPTA1 (Molecular Probes) into a fine axonal branch of the mouse diaphragm muscle. *W. Coleman. Bykhovskaia Lab*

Our recent graduates

Congratulations to those who received their degrees on May 22, 2006. Please keep in touch!

Doctor of Philosophy

Molecular Biology

Qianxing Mo **

Dehydroepiandrosterone and its Metabolites: Differences in Androgenic Activity and Effects on Gene Expression in the Mouse Hypothalamus and Hippocampus

Masters Degree

M.S. Molecular Biology

Melissa Sue Coyle
Elizabeth Kathryn Govek**
Brian Keith Heimbuch**
Edward James Hilt*
Susan Korenchuk*
Kevin Dean landgrebe*
Loretta Kathleen Maley
Michael Anthony Matrone
Cheryl A. Meyers*
Ronald Eric Painter**
Valerie Ann Schultz**
Ellen De Rose Semke
Amy Lisa Simcoe*
Joseph Frederick Tuminello**

Bachelor of Arts

Behavioral Neuroscience

Amy Michelle Bogart
Diana Romana Chirovsky
Vanessa Ann Compono
Adam Godfrey Green
Reid Edward Gronostajski
Ashish Kapila
Alexis Anne Lenz
Kimberly Marie Rhodes
Katrina Cherrie Rooney**
Pradeep Setty
Shannon Michelle Sorenson
Justine Elise Surico

Biology

Meredith Lynn Anderson
Kimberly Anne Brown
Marigdalia Kaleth Fort
Alessandra Kathleen Intili
Malgorzata Klek*
Ashley Strayer Leichner
Jill Marie Rafalko
Seth Aaron Rubinstein
Rebecca Avey Straw
Lauren Elizabeth Talemal

Molecular Biology

Adam Rutkowski*

Bachelor of Science

Behavioral Neuroscience

Jessica Lynn Buono
Jillian Paige DiMedio
Frank James Fabris
Ali Morgan Linsk
Kai Gerhard Schlingmann
Maren Rae Smithgall

Biochemistry

Shafia Ashraf
Kristin Baltrusaitis
Scott Frederick Blumhof
Ashley Michelle Cetola
Vamsi Krishna Kancherla
Robyn Michelle Lynch
Matthew Ray Miller
Christine Marie Stroka
Laura Kate Tom
Sallie Marie Wemple

Biology

Lola M. Ademosu
Amy Christine Ambrogi
Daniel Joseph DiVito
Kera-Marie Hagan
Jin Hong
Adam Jacob Kichler
Clinton Hank Lee

Biology (continued)

Daniel Lee
Rohit Shori Mehra
Vera Ann Partem
Jonathan Alan Lucius Pinto
Yos Mariam Rahnema Priestley
Scott Aaron Ritterman
Margarita Marie Sergonis
Christopher John Zambrano

Molecular Biology

Dominique Michelle Barnes
David Michael Esopi*
Ryan Dennis Ettare*
Laura Anne Herr
Michelle Ann Hunter
Harini Kasturi
Beth MacKeverican
Lauren Tracie May
Sarah Jane Muse
Vishal Chandulal Patel
Lindsay Ann Paternostro
Sheila Ramanathan
Vikram V. Saxena
Sarah Callaghan Storey

Do you have an e-mail address?

Please send us your e-mail address so we can save on production costs and you can receive your newsletter quickly. E-mail addresses can be sent to inbios@lehigh.edu. Be sure to include in the subject line "alumni e-mail, class of ??".

(*) = September 2005 degree recipient

(**) = January 2006 degree recipient

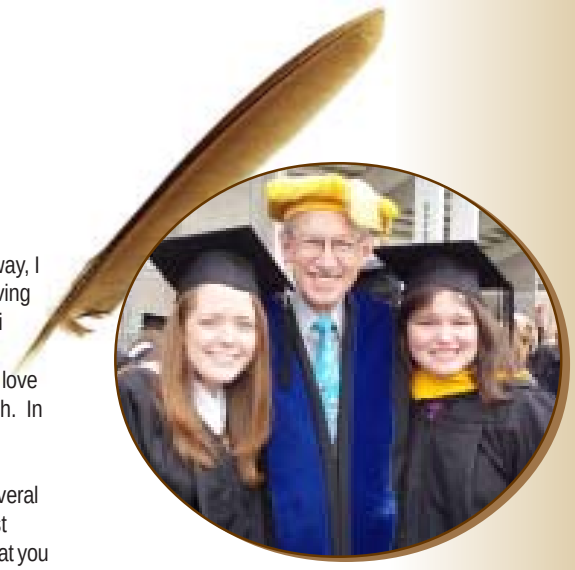
We get letters!

My name is Jill Rafalko. Some of you may remember me, some of you may not. Either way, I was a student in each of your classes at least once, and I graduated May of 2006. I am now living in NYC and attending grad school for my Master's degree in Genetic Counseling at Mount Sinai School of Medicine. I love it here and I'm having a great time!

I want to sincerely thank each one of you for being such an amazing professor. I absolutely love biology- and, as unbelieveable as it may seem, I enjoyed EVERY biology class I took at Lehigh. In fact, I did not realize how much I actually learned at Lehigh until I left. I am currently taking a "Molecules and Cells" class with the med students and we are learning all about cell biology, biochemistry, genetics, neuroscience, etc. The thing is, none of this material is new! In fact, several of the diagrams are exactly replicas of what I've seen in your classes. (Dr. Cassimeris- we just finished a section on actin, microtubules, and intermediate filaments and every figure was one that you had shown us.) Most importantly though, I understand all of the material, and I remember the vast majority of it from Lehigh....and that is all thanks to you guys. You are amazing at what you do, and you should be thanked by every student you've taught. I hope others realize, as I have, what an impact you've had on our lives. Thank you again and keep up the good work.

Jill Rafalko, '06
BA, Biology

PS. I really miss Lehigh!!

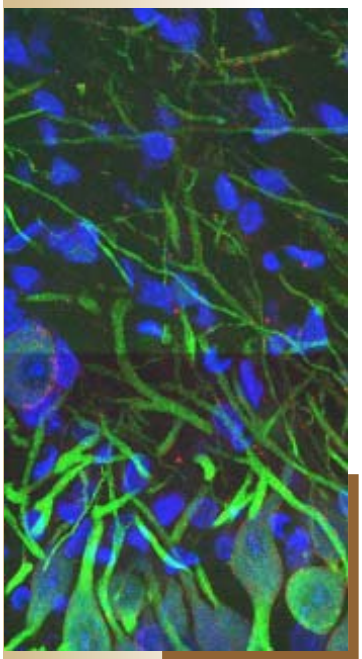


Jill Rafalko, Jeff Sands and Sarah Muse enjoy a final moment at the 2006 graduation ceremony

Alumni updates

Do you have any news to share? If so, please e-mail your information (name, year of graduation, degree, and news) to inbios@lehigh.edu

William F. Boucher (BA, Biology, 1938) attended the University of Rochester and received his MD in 1943. Dr. Boucher retired in 1996 after 50 years of family practice in Northampton, PA. He sat on the board of trustees for Northampton Community College for 23 years (3rd chairman for six years). He also is a former Lehigh County Medical Society President.



Neurons with their dendrites labeled in green. The red dots mark a protein that anchors receptors for inhibition. *R.M. Burger*

Ira B. Blank (BA, Biology, 1958) received his MD from Tufts University School of Medicine. Ira is currently chairman of the Department of Anesthesiology at Montgomery Hospital in Norristown, PA.

Glenn Egrie (BA Behavioral Neuroscience, 1990) "I completed medical school at Mount Sinai in 1995. I have recently completed 10 years of residencies in general and subsequently cardio-thoracic surgery at Harvard Medical School. I am moving to San Francisco to join the Department of Pediatric Cardiothoracic surgery at UCSF. Thanks for a solid education."

Myla Goldman (B.S., Behavioral Neuroscience, 1994) completed her MD degree from Rush Medical College in 1999 and entered neurology training in 2003 and worked as a neurologist at the Cleveland Clinic Foundation. "I am currently at UVA in Charlottesville in a new staff position."

Christy Dougherty (Ph.D. 1996, Biochemistry) is leading a small team of scientists at Merck. "My team supports bioanalytical method development/validation, transfer of technologies, and technical support to our regulatory groups for a variety of our vaccine products."

David Zwally (BA, Molecular Biology, 1996) "I am currently an associate at an intellectual property firm in New York City. My practice focuses on patent litigation involving brand and generic drugs.

Glenda Trujillo (BS, Biochemistry, 1998) received her Ph.D. from Stony Brook in 2006, and is currently doing her postdoctoral training in Pathology at the University of Michigan, Department of Internal Medicine

Alysha (Schwartz) Day (B.S., Molecular Biology, 2000) is currently working at Merck and Company in West Point, PA in the Antiviral Research department, developing new HIV treatments. "This past April I was married to Christopher Day, also a Lehigh graduate from the College of Engineering, and we are now living in Allentown, PA."

Sara Fuller (BS, Biology, 1998) earned her Master's degree (in 2003) in Medical Laboratory Science from Northeastern University, with a concentration in Microbiology, as well as a Post-bacc certificate in Clinical Microbiology. She was employed as a laboratory technician in a Neurology research lab at Massachusetts General Hospital and Cornell Medical School (focused on ALS and Huntington's Disease research) and is currently working in a clinical microbiology lab at the Lahey Clinic (outside of Boston).

Lynn Roginsky (MS Molecular Biology, 1999) is currently an assistant professor of biology at Delaware County Community College.

Olga Argeros (BA, Behavioral Neurscience, 2001) "Having received my MD degree in May 2005 from Temple Univ. I'm presently enrolled for my internship at Robert Wood Johnson Medical Center at New Brunswick, NJ. My specialty is OB/GYN."

Rachel Patterson (BS Molecular Biology, 2001) graduated from UMDNJ-Robert Wood Johnson Medical School, in New Brunswick, NJ on May 24, 2006 where she earned the Doctor in Medicine Degree. She will be doing her residency in Emergency Medicine at Cooper University Hospital, in Camden, NJ.

Michelle Siry (BS, Biology, 2001) is currently a fourth year dental student at Stony Brook School of Dental Medicine.

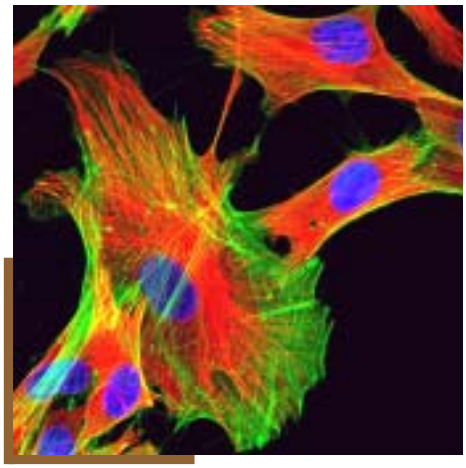
Anil Trindade (BS, Biochemistry, 2001) graduated from Duke University School of Medicine in 2005, and is currently a resident of Internal Medicine at Johns Hopkins University Hospital in Baltimore, MD

Mark Burshteyn (BS, Behavioral Neuroscience, 2002) graduated from UMDNJ-Robert Wood Johnson Medical School, in New Brunswick, NJ on May 24, 2006 where he earned his Doctor in Medicine Degree. Burshteyn is attending Temple University Hospital, in Philadelphia, PA, for his residency in Radiology.

Christy Halstead (BS, Biology, 2002) is doing her medical internship in Pediatrics at Temple University Hospital.

Nihar Desai (BS, Biology, 2002) graduated from University of Connecticut School of Medicine where he earned his Doctor of Medicine degree, and has started his residency in Internal Medicine at Brigham and Women's Hospital, one of the three Harvard University Hospitals.

Rajesh Kabadi (BS, Molecular Biology, 2002) is a fourth year medical student at the University of Chicago Medical School and is busy applying for residencies.



Cytoskeletal filaments (red, green) and nuclei (blue) in lung cells. *J. Warren. Cassimeris Lab*

Neha Korde (BS, Molecular Biology, 2002) is serving an internship in Medicine at Temple University Hospital.

Erin Reble (BS, Behavioral Neuroscience, 2002) graduated from UMDNJ-New Jersey Medical School in Newark, NJ on May 24, 2006 where she earned her Doctor of Medicine Degree. She will be attending Hospital of University of Pennsylvania for her residency in obstetrics and gynecology.

Arvind Trindade (BS, Molecular Biology, 2002) graduated from UMDNJ-Robert Wood Johnson Medical School, in New Brunswick, NJ on May 24, 2006 where he earned his Doctor in Medicine Degree. Trindade will be attending The Mount Sinai Hospital, in New York City, for his residency in Internal Medicine.

Sami Amin (BS, Behavioral Neurosciences, 2003) is currently a senior account executive at Hill and Knowlton in Manama, Bahrain. He is currently applying to graduate schools to get his MBA.

Nick Santangelo (Ph.D., Biology, 2003) was appointed as assistant professor in the Department of Biological Sciences at Eastern Kentucky University in Richmond, Kentucky.

Jaime Warmkessel (BS, Molecular Biology, 2003) is a Preclinical Development Scientist for Medarex, Inc. "I primarily develop pharmacokinetic and immunogenicity assays for trials involving fully human monoclonal antibody therapy."

Richelle Francis (BA, Biology/Psychology, 2004) received her Master's Degree in Bioinformatics at the University of the Sciences in Philadelphia.

Lisa Antoniacci (Ph.D., Molecular Biology, 2005) was appointed as assistant professor in the Science Department at Marywood University in Scranton, Pennsylvania.

Ali Linsk (BS, Biochemistry, 2006) has been working at Mercer Bucks Cardiology since graduatiion and is in the process of making a decision on what medical school to attend in the Fall of 2007. She and Ashley Leichner (BA, Biology, 2006) are planning a summer trip to Africa for a month of volunteering.

Jennifer Gumm, Ph.D. candidate, busy doing behavioral research in the field. Ms. Gumm is funded by the Texas Parks and Wildlife Department to restore the breeding habitat of the highly endangered Leon Springs Pupfish in its natural habitat near Ft. Stockton, Texas.

Qianxing Mo (Ph.D., Molecular Biology, 2006) is currently working in the Biostatistics and Epidemiology Department at Memorial Sloan Kettering in New York City. Prior to this, Qianxing was a post-doctoral fellow in the Biostatistics Department at Texas A&M.

Alumni research focus

Tracy Vrablick (BS, Biochemistry, 2005) is a PhD candidate at Penn State University in the Biochemistry, Microbiology, and Molecular Biology Program. "I study organogenesis in the nematode C. elegans. C. elegans have an invariant cell lineage, transparent body and 2 sexes which make them ideal for using genetics and light microscopy to determine the cell-cell interactions that regulate organ development. In my lab we focus on vulva development, and have isolated several interesting genes using forward genetics mutagenesis screens. I am focusing on a gene called cog-3 which we have characterized in the hermaphrodite as having a temporal defect - the development of the uterus is delayed - and this results in a defective connection between the uterus and vulva. We also found that the cog-3 males are unable to complete mating. I am currently working to clone this gene and characterize the specific cellular defect in the males. Studying males will allow us to understand how the cog-3 gene can direct the development of two very different but tractable organ systems."

Scholars to volunteer in Africa

l to r: Natasha Rastogi, Nikita Alexiades, Prof. Lowe-Krentz, Jennifer Olenik, Andrew Brown

A group of four undergraduate students who are in the Pool Scholars program for pre-medical studies will be traveling to Tanzania in May for a month-long volunteerism experience. Working with the United Planet's Volunteer Quest program, the students will spend two weeks conducting AIDS and HIV awareness programs and another two weeks volunteering in Tanzanian clinics. Nikita Alexiades, Andrew Brown, Jennifer Olenik and Natasha Rastogi have been working with Professor Linda Lowe-Krentz in a special topics course discussing issues of travel safety, foreign culture, health care in Tanzania, and defining their personal goals for this experience.

The students were inspired to commit to this summer experience after hearing about past trips from other students. The group is looking forward to immersing themselves in a new culture and witnessing first-hand how health care is provided outside of the United States, especially in a country dealing with extreme poverty. Upon their return to Lehigh in the fall, the students plan to share details of their travels with the Lehigh community, hoping to inspire other Lehigh students to consider a volunteer abroad experience.

Department of Biological Sciences
111 Research Dr.
Bethlehem, PA 18015
Tel: 610.758.3680
Fax: 610.758.4004
www.lehigh.edu/~inbios

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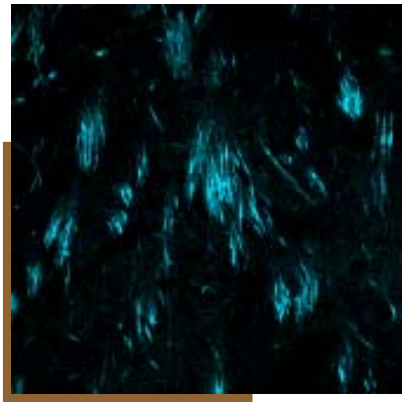
Department of Biological Sciences
Alumni News
111 Research Dr., B217
Bethlehem, PA 18015



Calbindin, a calcium binding protein, expressed in fiber bundles crossing the striatum of the adult male zebra finch brain. *R. Wynne. Saldanha Lab*